AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-8. Cancelled.

9. (New) Device for determining chromatic dispersion of a sample comprising

a radiation source for emitting a radiation with different wavelengths;

an interferometer apparatus which comprises a reference arm and a measurement arm and which is irradiated by the radiation source, for generating a sample-specific interference radiation;

a measurement apparatus, with which power changes and polarization changes of the interference radiation are measured; and

an evaluation apparatus, with which chromatic dispersion of the sample is determined on the basis of the power changes and the polarization changes,

where the measurement apparatus comprises a polarimeter.

10. (New) Device according to claim 9 where two orthogonal polarizations are evaluated with the polarimeter in such a way that power from the reference arm of the interferometer apparatus is split into two partial powers which are of approximately the same magnitude.

11. (New) Device according to claim 9 where the radiation source comprises a tuneable laser.

12. (New) Device according to claim 10 where the radiation source comprises a tuneable laser.

13. (New) Device according to claim 9 where the chromatic dispersion is determined in the evaluation apparatus by evaluation of wavelength-dependent Stokes parameters.

14. (New) Device according to claim 10 where the chromatic dispersion is determined in the evaluation apparatus by evaluation of wavelength-dependent Stokes parameters.

15. (New) Device according to claim 11 where the chromatic dispersion is determined in the evaluation apparatus by evaluation of wavelength-dependent Stokes parameters.

16. (New) Method for determining chromatic dispersion of a sample comprising:

generating an electromagnetic beam of radiation comprising at least two various wavelengths;

splitting the beam into a reference beam and a measurement beam to radiograph the sample;

superimposing the reference beam and the measurement beam thereby forming an interference beam;

measuring wavelength-dependent power changes and polarization changes of the interference beam; and

determining the chromatic dispersion of the sample on the basis of the power changes and the polarization changes,

where the measuring is done by a polarimeter.

17. (New) Method according to claim 16 where two orthogonal states of polarization for determining the power changes are selected using polarimeter so that power from reference

arm of interferometer apparatus is broken down into virtual partial powers of approximately the same magnitude.

18. (New) Method according to claim 16 where the electromagnetic beam is generated by a tunable laser.

19. (New) Method according to claim 17 where the electromagnetic beam is generated by a tunable laser.

20. (New) Method according to claim 16 where the chromatic dispersion is determined from wavelength-dependent Stokes parameters by reference scan and measurement scan.

21. (New) Method according to claim 17 where the chromatic dispersion is determined from wavelength-dependent Stokes parameters by reference scan and measurement scan.

22. (New) Method according to claim 18 where the chromatic dispersion is determined from wavelength-dependent Stokes parameters by reference scan and measurement scan.